259,040 COMPLETE SPECIFICATION

[This Drawing is a reproduction of the Original on a reduced scale]

Fig.1.

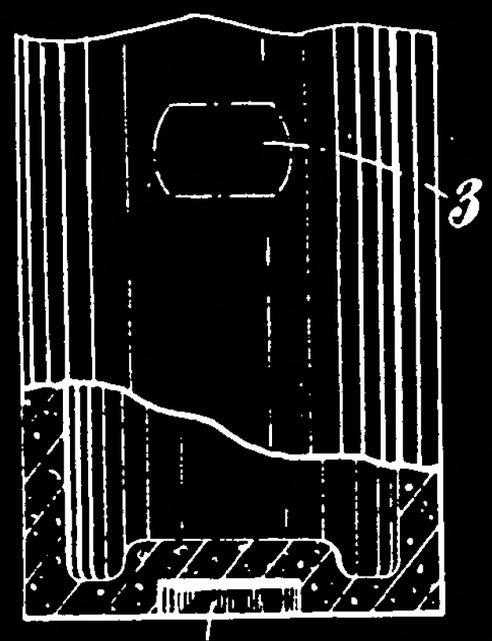


Fig.2.

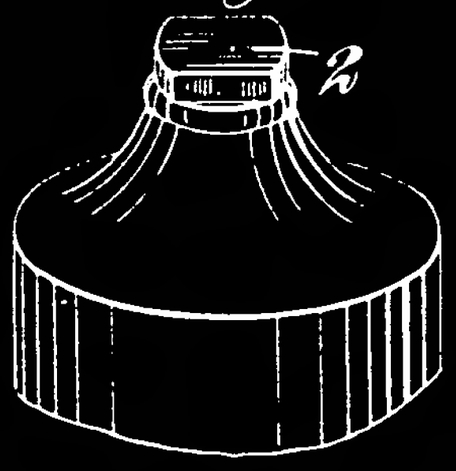


Fig.3.

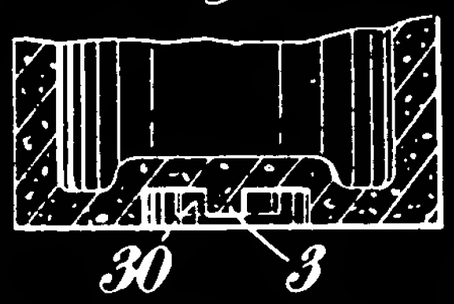


Fig.4.

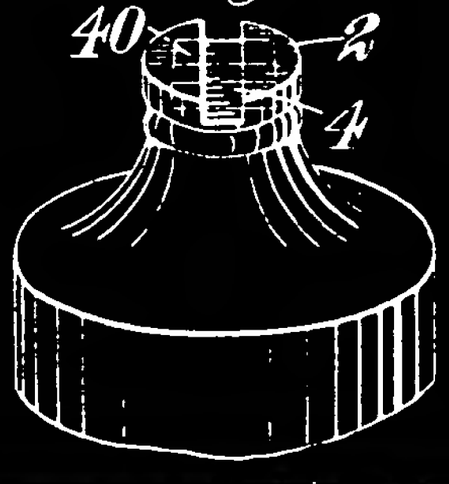


Fig.5.

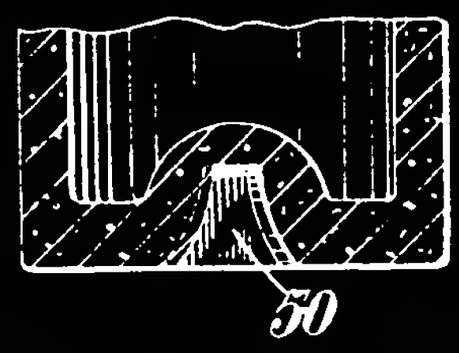


Fig.6.

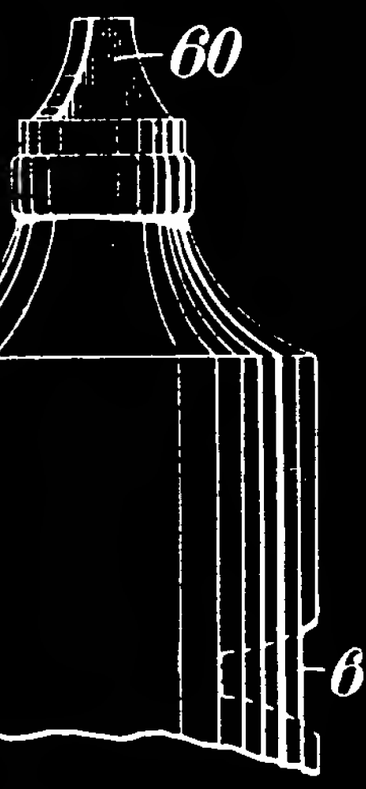


Fig.7.

Fig.8

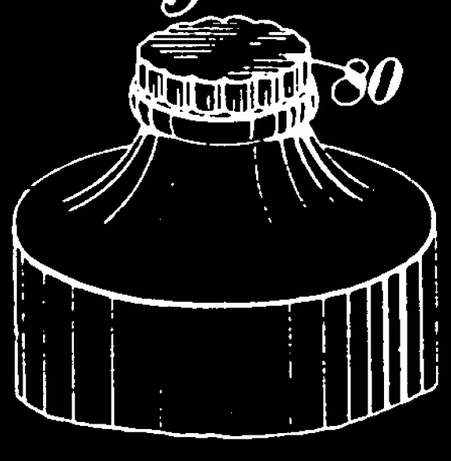


Fig.9.

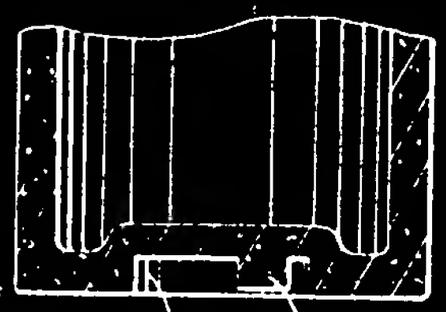


Fig.10.

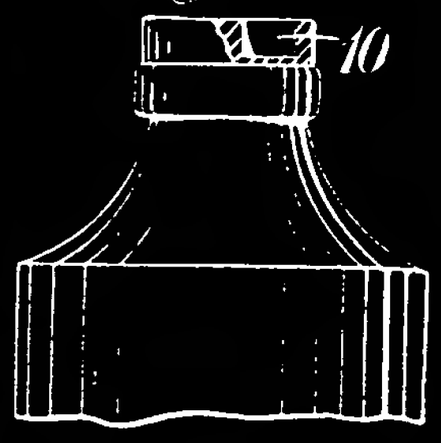


Fig.11.

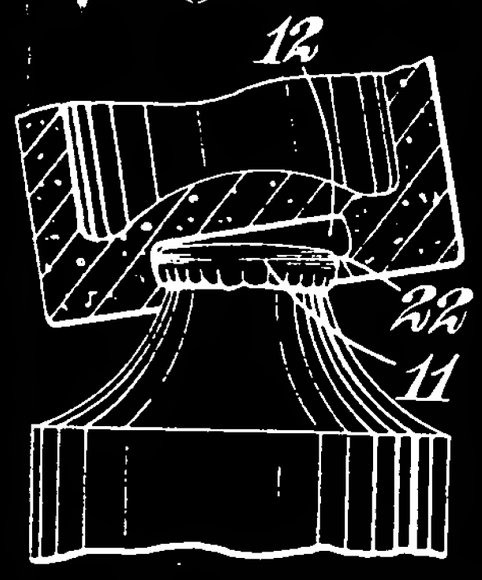


Fig.12.

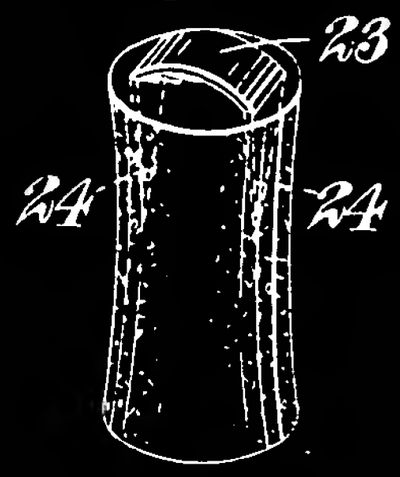


Fig.13.

Fig.14.

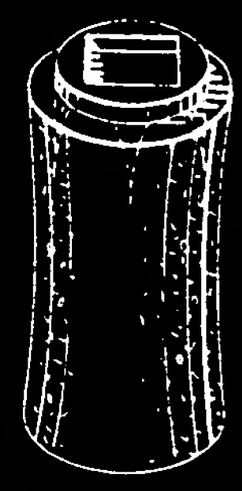
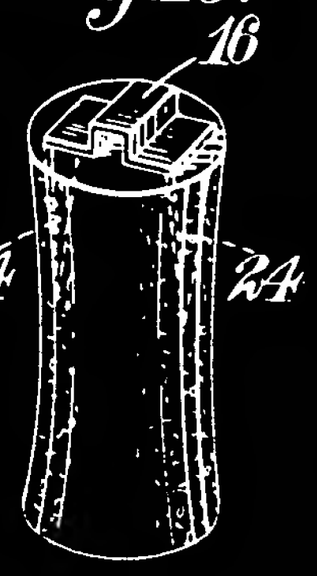


Fig.15.

Fig.16.



Charles & Read Ltd. Photo Litho

PATENT SPECIFICATION

Application Date: Oct. 16, 1925. No. 25,885/25. **259,040**

,, ,, Oct. 30, 1925. No. 27,290 25.

One Complete Left: July 14, 1926.

Complete Accepted: Oct. 7, 1926.

PROVISIONAL SPECIFICATION.

No. 25,885, A.D. 1925.

Improvements in or relating to Screw-stoppered Bottles.

I, HENRY THOMAS DAVIDGE, a subject of the King of England, of Struan, 9, Kidbrook Grove, Blackheath, London, S.E. 3, do hereby declare the nature of this invention to be as follows:—

This invention relates to screw-stoppered bottles. The stoppers of such bottles are frequently screwed in so tightly that it is very difficult and even impossible to unscrew the stopper by using one's fingers only, and usually no other means are available for the purpose.

It is the object of the present invention to enable a screw-stoppered bottle to be used as a powerful tool for removing a screw-stopper of a companion bottle, for there is usually a second bottle available. This object can be achieved according to the present invention without putting any difficulty in the way of making the bottles, filling, or cleaning them, and packing them for transport, and the ordinary forms and sizes of boxes, crates, or other bottle-containers can be used without any increase in their size or weight or reduction in their carrying capacity. All that is necessary to enable the present invention to be applied is that the screw-stopper should possess a head which in plan is angular; that is to say a head which in plan is a circle with a flat upon it or with a snug or projections upon it, or is hexagonal, or of some such form that if it were contained in a matrix it could only rotate with and not in relation to such matrix. Many varieties of such an angular-headed stopper are already well known.

Accordingly the present invention is of a bottle intended to receive in its neck an angular-headed screw-stopper and with a bottom or side which is recessed or otherwise so formed as to fit over or into and serve as a spanner or key for the head of an angular-headed screw-stopper when said stopper is in the neck of a companion bottle.

Such a bottle might for instance have a central square recess in its bottom to fit over the head of a screw-stopper having parallel flats upon at least two of its opposite sides, or having a flat on one side. Or the recess, instead of being in the bottom of the bottle, might be say half way up one side, if it were thought to be necessary that more leverage should be available than that which would exist in a bottle with a recess in the middle of its bottom.

If the head of the screw-stopper were provided with a central groove across it, then the recesses in the bottom would be formed on opposite sides of a central bar, which latter would fit the groove.

Instead of a diametral groove in the stopper, there might be an angular or eccentric depression, in which case the recess in the bottle would have an angular or an eccentric plug in it to fit the depression.

It will be seen from the foregoing that the contours of existing bottles could be maintained unaltered except for the presence of the aforesaid recess or recesses.

Dated this 16th day of October, 1925.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London,
E.C. 1,
Chartered Patent Agents.

PROVISIONAL SPECIFICATION.

No. 27,290, A.D. 1925.

Improvements in or relating to Stoppers for Bottles.

I, Henry Thomas Davidge, B.Sc., M.I.E.E., a subject of the King of England, of Struan, 9, Kidbrook Grove, Blackheath, London, S.E. 3, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in stoppers for bottles. In the Provisional Specification of my Application No. 25,885/25 it has been pointed out that the stoppers of screw-stoppered bottles are frequently screwed in so tightly that it is very difficult, and even impossible, to unscrew the stopper by using one's fingers only and that usually no other means are available for the purpose.

Such a statement is equally true of bottles that are stoppered by plugs, corks and bungs, even when these are not screw-threaded, for not only are these usually held in very tightly but often their heads project so slightly that even where they may be a loose fit they do not expose sufficient of their tops to enable the fingers to grasp them firmly.

It is the object of the present invention to enable such plugs, corks and bungs or any others not primarily suitable for extraction by the special bottle which is described in Provisional Specification No. 25,885/25 to be rendered suitable for extraction thereby.

According to the present invention a stopper of cork with flat circular ends is provided with an auxiliary non-rotatable head such as is hereinafter described having angular sides or having an angular or eccentric depression in it. Thus equipped, the stopper can be twisted quite easily out of the neck or opening occupied by it, by using the bottle of the aforesaid provisional specification, that is to say a bottle having its bottom or side recessed or otherwise so formed as to fit over or into and serve as a spanner or key for the angular head of the stopper, the stopper being rendered angular in the present case by the auxiliary head.

The present invention, therefore, comprises for a stopper with flat circular ends, with the neck of the bottle or container screw-threaded or not, an auxiliary non-rotatable head which is, for instance, a shallow block of metal angular in plan with pointed "struck-up" legs projecting downwardly from the block and driven into the stopper by blows or pressure on the block. Instead of the block being angular it could have an angular or eccentric depression or hole in it to take an angular or eccentric plug formed on the bottle aforesaid. An alternative form of angular auxiliary head according to the present invention is a strip of metal with pointed ends turned downwards to enter the stopper, such strip being either raised as to its middle above the top of the stopper or partly in contact with the top and the centre portion in bridge form so as to constitute in plan an angular head, non-rotatable in relation to the key or spanner afforded by the aforesaid bottle.

The ends of the strip or the legs of the block aforesaid prevent the auxiliary head from turning except in company with the stopper when the leverage for extracting the stopper is applied by the suitably-recessed bottle.

Dated this 30th day of October, 1925.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C. 1,
Chartered Patent Agents.

COMPLETE SPECIFICATION.

Improvements in or relating to Bottles and Stoppers for Bottles.

I, Henry Thomas Davidge, B.Sc., M.I.E.E., a subject of the King of England, of Struan, 9, Kidbrook Grove, Blackheath, London, S.E. 3, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to bottles and stoppers for bottles.

The stoppers of bottles are frequently

screwed in or thrust in or otherwise secured so tightly that it is very difficult and sometimes even impossible to remove the stopper by using one's fingers only, and usually no other means are available for the purpose.

It is one object of the present invention to enable the bottle to be used as a powerful tool for unstoppering a companion bottle, for there is usually a second bottle available. This object can be achieved according to the present invention without putting any difficulty in the way of making the bottles, filling or cleansing them, and packing them for transport, and if desired the ordinary forms and sizes of stoppers and boxes, crates or other bottle-containers can be used without any increase in size or weight or reduction in carrying capacity. All that is necessary to enable the present invention to be applied is that the stopper should possess or be given a head which is angular in plan or should possess or be given a margin projecting radially at the outer end of the bottle-neck so as to afford engagement for a spanner or key produced according to the present invention in the manner hereinafter described. By the expression "head which is angular in plan", is intended one which in plan is a circle with a flat upon it, or with a snug or projections upon it, or is triangular or hexagonal, or which is of any such form that if it were contained in a matrix it could only rotate with and not in relation to such matrix; many varieties of such a stopper are already well-known.

Accordingly, the present invention comprises a bottle which is intended to be stoppered by an angular-headed stopper and which is recessed so as to receive and serve as a spanner or key for the head of a second angular-headed stopper when said second stopper is in place at the mouth of a companion bottle.

The present invention also comprises a bottle which is intended to be stoppered by a "crown" stopper and which is recessed so as to receive and serve as a key for a second similar cap when the second cap is in place at the mouth of a companion bottle.

A bottle according to this invention might, for instance, have a central square or flat-sided recess in its bottom to fit over the head of a screw-stopper having parallel flats upon at least two of its opposite sides. Or the recess, instead of being in the bottom of the bottle, might be, say, half way up one side if it were thought to be necessary that more leverage should be available than that which would exist in a bottle with a recess in the middle of its bottom.

If the head of the screw-stopper were provided with a central groove across it, then the recesses in the bottom would be on opposite sides of a central bar, which latter would fit the groove. Instead of a diametral groove in the stopper, there might be an angular or eccentric depression, in which case the recess in the bottle would have an angular or eccentric plug in it to fit the depression.

It will be seen from the foregoing that the contours of existing bottles could be maintained unaltered, except for the presence of the aforesaid recess or recesses.

Bottles that are stoppered by plugs, corks, and bungs, even when these stoppers are not screw-threaded and are not primarily suitable for extraction by the bottle of the present invention, above described, can have their stoppers rendered suitable for extraction or loosening thereby, and according to this part of the present invention a stopper or cork with, e.g. flat circular ends is provided with an auxiliary non-rotatable head such as is hereinafter described having angular sides or having an angular or eccentric depression in it, and being provided with downwardly-extended legs penetrating the stopper to keep the head from rotating in rotation to said stopper. Thus equipped, the stopper can be twisted quite easily out of the neck or opening occupied by it, if that opening is screw-threaded, or can at least be turned in a non-threaded neck, by using the recessed bottle above described, that is to say a bottle having its bottom or side recessed or otherwise so formed as to fit over and serve as a spanner or key for the angular auxiliary non-rotatable head of the stopper, the stopper thus being rendered angular in the present case by the auxiliary head.

The present invention, therefore, comprises for a stopper with flat circular ends, with the neck of the bottle or container screw-threaded or not, an auxiliary non-rotatable head which is, for instance, a shallow block of metal angular is plan and which according to this invention is provided with pointed "struck-up" legs projecting downwardly from the block and driven into the stopper by blows or pressure on the block. Instead of the block being angular it could have an angular or eccentric depression or hole in it to take an angular or eccentric plug formed on the bottle aforesaid. An alternative form of angular auxiliary head according to the present invention is a strip of metal with pointed ends constituting the legs aforesaid turned downwards to enter the stopper, such strip

being either raised as to its middle above the top of the stopper or being as to its middle partly in contact with the top and having the centre portion in bridge form so as to constitute in plan an angular head, non-rotatable in relation to the key or spanner afforded by the aforesaid bottle.

The ends of the strip or the legs of the block aforesaid prevent the auxiliary head from turning except in company with the stopper when the leverage for extracting the stopper is applied by the suitably-recessed bottle.

In the accompanying drawing, which illustrates bottles and stoppers according to the present invention :—

Figure 1 is a side elevation of the lower part of a bottle with its bottom in vertical central section ;

Figure 2 is a perspective view of the upper end of a bottle for which the bottle shown in Figure 1 is a key.

In Figure 2 the stopper-head is numbered 2. In Figure 1 there is a cavity 1 shaped to correspond with the stopper-head 2 and to receive the latter as in a matrix in relation to which it cannot turn. A like cavity might instead be formed in the side of the bottle as indicated by chain-lines at 3 in Figure 1.

Figure 3 is a vertical central section of the bottom end of another bottle ;

Figure 4 is a perspective view of the upper end of a bottle for which the bottle shown in Figure 3 is a key.

The stopper-head 2 in Figure 4 has a central groove 4 across it and a recess in the bottom of the bottle in Figure 3 contains a central diametral bar 3 to fit the groove 4. Alternatively in Figure 4 the stopper-head could have instead of the groove 4 a central rectangular depression 40, such as is shown by chain-lines in which case the bottle Figure 3 would have in its bottom recess a central rectangular plug as shown by dotted lines 30, to be received in the depression 40.

Figure 5 is a view similar to Figure 3 ;

Figure 6 is a side elevation of a bottle that is screw-stoppered by a stopper 60 having a tapered top the opposite outer curved facets of which correspond with opposite inner facets in a cavity 50 in the bottle.

Figure 7 is a vertical central section of the lower end of a bottle ;

Figure 8 is a side elevation of the upper end of a bottle that is stoppered by a stopper 80 that has a milled or corrugated circumference. A cavity 70 in Figure 7 is formed as though it were a matrix for the milled or corrugated head of the stopper 80.

Figure 9 is a view similar to Figure 7 and

Figure 10 is a view similar to Figure 8 ; but the stopper in Figure 10 has a head which externally is a smooth cylinder, containing a circular depression 10 eccentrically disposed in it. The depression in Figure 9 is circular to receive the aforesaid head and is provided with an eccentrically-disposed plug 90 in it to fit the depression 10.

Figure 11 shows the upper end of a bottle that is stoppered by a "crown" stopper 11 and also shows, above the crown-stopper a bottle bottom in section with a recess 12 in it larger in diameter than the crown and provided with an interior flange 22 also larger than the crown but capable of engaging as shown beneath the crown at one side of the latter so that it will lift the crown when the right-hand underside in Figure 11 of the flange is brought down against the bottle neck, and the upper bottle is used as a lever turning about the fulcrum provided by the lower bottle where the said underside of flange comes to bear on it.

Figure 12 is a perspective view of a cork with an auxiliary non-rotatable head consisting of a strip of metal having a raised middle portion 23 parallel-sided and curved upwardly and constituting a head which would not turn in a correspondingly-shaped matrix in the side or bottom of a bottle, and also having legs 24 with pointed ends projecting downwardly into the cork to secure it thereto and to prevent it from turning therein.

Figures 13, 14 and 15 show upon corks auxiliary heads similarly secured, one (Figure 13) a rectangular auxiliary head, another (Figure 14) with a central rectangular depression, and the third (Figure 15) with an eccentric rectangular depression 15 in it to receive a projection such for instance as the eccentric projection 90 of Figure 9.

Figure 16 is a view of an auxiliary head formed of a strip of metal with pointed ends 24 constituting the legs aforesaid and being as to its middle partly in contact with the top of the stopper and having the centre portion 16 in bridge form so as to constitute in plan an angular head.

In Figure 6 the bottle has a cavity 6 in its side shaped to fit a stopper such as 60 in the same figure. It is to be understood that any of the cavities hereinbefore described as being formed in the bottom of a bottle could equally well be provided in its side.

Having now particularly described and ascertained the nature of my said inven-

ation and in what manner the same is to be performed. I declare that what I claim is:—

1. A bottle which is intended to be stoppered by an angular-headed stopper and which is recessed so as to receive and serve as a spanner or key for the head of a second angular-headed stopper when said second stopper is in place at the mouth of a companion bottle.

2. A bottle which is intended to be stoppered by a "crown" stopper and which is recessed so as to receive and serve as a key for a second cap when the second cap is in place at the mouth of the companion bottle.

3. A recessed bottle substantially such as illustrated in Figures 1 and 2 or 3 and 4 or 5 and 6 or 7 and 8 or 9 and 10 or Figure 11 of the accompanying drawings, for the purposes described.

4. For a stopper with flat circular ends and intended for the neck of a bottle or container screw-threaded or not, the provision of an auxiliary non-rotatable head having downwardly-extended legs such as 24 and so shaped as to be non-rotatable in relation to the key or spanner afforded by the aforesaid bottle, e.g. such an auxiliary head as is illustrated in Figure 12 or 13, or 14 or 15, or 16 of the accompanying drawings.

Dated this 14th day of July, 1926.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C. 1.
Chartered Patent Agents.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1926.